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(54) ORGANIC THIN FILM TRANSISTOR

(57)Abstract

PROBLEM TO BE SOLVED: To improve the carrier mobility between a source electrode and a drain electrode by arranging an orientating film adjacent to an organic semiconductor material film for matching molecule uniaxes among the source electrode, the drain electrode and the organic semiconductor material film.

SOLUTION: An organic TFT 20 includes a gate electrode 21 that is positioned on one of gate insulating material layers 22 and the gate insulating material layer comprises a dielectric medium. An orientating film 23 is arranged on the surface on the other side of the gate insulating material layer 22. A molecule matching organic semiconductor film 24 is arranged on the surface on the other side of the orientating film 23 and a pair of conductor strips 25 and 26 with spacing between them horizontally are arranged each as the source electrode and the drain electrode on the surface on the other side of the molecule matching organic semiconductor film 24 with the horizontal spacing between them. The molecules inside the organic semiconductor material of the organic TFT thin film match so that the carrier mobility from the source to the drain is in the order of several times larger than the mobility in the other direction.



20

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